



**NORTHWEST LININGS &  
GEOTEXTILE PRODUCTS, Inc.**

*"Helping to Protect the Environment"*

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## Common Geosynthetic Questions w/Answers:

### **What fabric is typically used for French Drains?**

Typically a 4 oz non-woven is spec'd such as Mirafi 140N. Crown R042 would be our equiv which is stocked in four convenient roll widths. For WSDOT projects, make sure a 6 oz is not required (9-33 Underground Drainage). A lot of times too we can just sell a cheap 3oz or our NWL 500 if there is no spec.

### **What fabric overlap is used for different applications?**

Similar to erosion blanket overlaps.... it varies. It is best to have customer check the drawings or talk with his engineer. If we recommend too small an overlap, the mistake would not be reversible. The average overlap is 12" for geotextiles under firm subgrade conditions, 24" to 36" under soft soils. On erosion typically you will see 6" overlap.

### **What are benefits to using "Strip Drain" in a french drain application?**

If approved, the smaller trench results in labor & material savings as the usual gravel and pipe are eliminated. Also time is money and strip drains will be installed much faster.

### **What are typical uses for Woven and Non-Woven fabric types?**

Woven (slit film): silt fence, separation fabric between native road base and road aggregate, stabilization of roads/parking lots with soft soils.  
Non-Wovens: fabric wrap around underdrain trench gravel, under rip-rap, asphalt overlays, separation & stabilization for road base.

### **How does a Dewatering Bag work?**

Common names: "Dirt Bag", Sediment Sack.. A large bag, typically 15' x 15', fabricated from 8 oz non-woven fabric, with a opening large enough to accommodate a pump hose or culvert pipe. The purpose of the bag is to filter sediments and sand from construction site water. Smaller clay particles will only be filtered after some "clogging" has occurred. NWL can fabricate any bag size with 7.5' widths x any length being the most convenient.

### **What direction is "Uniaxial" geogrid installed in a reinforced wall application?**

The roll width direction needs to be installed with the "Machine Direction" perpendicular with the wall length. The machine direction is the direction you would face if you were pulling on the roll to unroll it. Uniaxial geogrids have their principle strength along this machine direction. The grid elements in the XMD (cross machine direction) are used only to support elements in the MD. The geogrid panels in each layer (lift), usually do not have to be overlapped, but commonly are 4"-6".

### **How are GABIONS assembled? How is EZ Roll installed?**

It is best to forward the manufacturer's excellent literature to handle these questions.

### **What are sandbags made of?**

The most common material for sandbag construction is a low strength slit-film woven geotextile similar to silt fence fabric (only weaker). Bag color can be white, green or orange. Woven sandbags are a low tech commodity item which we import from Asia. Packaging is 1,000 ea/ bale further broken up with 10 ea 100 paks. Burlap sandbags are available locally constructed out of 10oz burlap. NWL can sew "sandbags" when specified out of other materials such as reinforced liner, non-wovens, or higher strength wovens. Filled sandbags are available also.

### **What are the different types of Root Barrier?**

Most root barrier specified is of the “engineered panel” type such as Deep Root or Root Solutions. These barriers are HDPE, Polypro or Polystyrene panels 24” wide and of several depths. The panels slide together side to side to form the required lengths. These panels also have deflecting ribs which deflect roots down and also serve to prevent the panels from lifting. Also, we also have smooth 60 mil HDPE stocked in 18”, 24”, 36” x 100’ rolls. This is an attractive option when specifications are sparse & pricing is an issue. This item can be presented as a stocking item to cities (Public Works) and large landscape contractors.

### **What’s the availability of Pre-Seeded Erosion Blankets?**

The first problem with pre-seeded blankets is the large minimum quantity needed for a vendor to manufacture. Second, the actual specified seed mix will need to be acquired in the correct quantity and shipped to factory. It is usually more cost effective to have the area hand seeded or hydroseeded with the appropriate blanket applied on top. Also the big problem with pre-seeded blankets is contact with the subgrade so that germination can occur, this has been a big down fall on pre-seeded blankets.

### **Do I seed below or above the Erosion Blanket?**

Technically, it is always better to seed first then install the erosion blanket. This puts the seed directly on the soil (where the moisture is) giving it optimal conditions for germination. The only seed that can be effectively applied over blankets would be “open” style blankets such as Jute or Ecojute. Hydroseeding methods can be effective over some blankets because of the moisture holding properties of the “mulch”.

### **How many staples are needed for my erosion blankets?**

All manufacturers publish a recommended stapling pattern. Typically, these stapling patterns average 2 ea staples per sy of blanket. So, for customer inquiries, I would quote 16 – 17 boxes of staples (1,000 ea box) for 8,000 SY of erosion blanket.

Staples: If no staple type is specified, we usually go with 6” U-Type.

### **What is the MAIN difference between woven monofilaments fabrics (of the same brand)?**

Water flow. Example: Mirafi FW700 = 18 gal/min Mirafi FW400 = 70 gal/min

There are other differences, of course, but water flow rate would be the main difference. If the application is calls for sediment filtering, then FW700 with its low water flow would not be appropriate.

### **What is the purpose of Sheet Drain and how is it installed?**

Sheet drains (prefabricated vertical drain board) are typically used on below grade foundations or sheet pile walls to drain water and eliminate water pressure. Sheet drains create a ½” void against the wall allowing subsurface water to seep through the filter fabric dropping down to a drain pipe system. Sheet drains may be placed in vertical or horizontal strips and held in place with masonry nails or panel adhesive temporarily until backfilled. Adjacent sheets need not be overlapped because of extra fabric on the sheet edges. Sheet drains are also used as a protection board over other types of waterproofing.

### **“Geocell” panels are made of what material? What are the 3 main applications for “Geocell”? What are the most common cell heights?**

All of the vendors make the panels out of HDPE. The most common cell heights are 4”,6”, and 8”. Applications include:

1. Ground stabilization... over subgrade to create stabilized paths, and roads.
2. Slope stabilization....placed on hillsides to keep soil in place while it vegetates.
3. Retainings walls.....8” height geocell is placed horizontally in layers to create a stable retaining wall.

### **AASHTO M-288 refers to what type of specification?**

This is a federal specification by the American Assoc of State Highway & Transportation Officials. It is a 2 volume binder for testing of materials related to roads and bridges. We are mostly interested in the Geotextile Section. This specification is used on Federal Highway, Forest Service, & State of Alaska projects. The geotextile section is not focused on fabric properties as much as survivability. AASHTO divides the applications into: subsurface drainage, separation, drainage, stabilization, permanent erosion control, silt fence, & paving fabric. The survivability groups are Class 1 (strongest), Class 2, & Class 3. Respectively: 8oz , 6oz, & 4oz.

**What is the relevant geogrid property engineers need in designing retaining walls?**

Long Term Design Strength (LTDS) or Long Term Allowable Strength (T allow) is the property needed to specify geogrid into reinforced walls. This is derived from taking the Ultimate strength (T ult) and dividing it by 4 main factors of safety > Installation Damage, Creep, Chemical & Biological Degradation. Many other factors come into play but this is relationship of Ultimate Strength to Long Term Design Strength in a nutshell.

**What are the two main types of materials used in making Uniaxial Geogrids (retaining walls)?**

The types are divided into flexible (polyester) grids or rigid (polypropylene) grids. Almost all vendors use flexible (polyester) in their grids mainly because of its higher resistance to creep. Creep is the elongating of the grid under constant tension. If the creep rate doesn't flatten out, the wall may eventually fail. Polypropylene grids appear to be "stiffer" initially but with polypropylene's higher creep rate, polyester type grids in the long term will be effectively stiffer. Because of this creep factor, polyester geogrids are superior to polypropylene geogrids. In addition, polyester geogrids are generally lower in cost, easier to apply (more flexible) and come in wider rolls.

**An excavator / site prep contractor calls in to order 800' of silt fence on a project that is just breaking ground. In addition to the silt fence, list out all other products NWL can supply that he/she may have forgotten.**

Visqueen, Sandbags, Wood or Metal posts, Catch Basin Inserts, Erosion Control Blankets, Straw Wattles, Dewatering Bags